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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/034,661	12/20/2001	Duane S. Treybig	7560 ONES	1640
49459	7590	11/29/2006	EXAMINER	
NALCO COMPANY 1601 W. DIEHL ROAD NAPERVILLE, IL 60563-1198			METZMAIER, DANIEL S	
			ART UNIT	PAPER NUMBER

1712

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/034,661

Applicant(s)

TREYBIG ET AL.

Examiner

Daniel S. Metzmaier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-40 and 42-60 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 42-50 is/are allowed.
- 6) ☒ Claim(s) 1-36, 51-53 and 60 is/are rejected.
- 7) ☒ Claim(s) 37-40 and 54-59 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Claims 1-40 and 42-60 are pending.

#### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 18, 2006 has been entered.

#### ***Terminal Disclaimer***

2. The terminal disclaimer filed on August 18, 2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of 6,569,983 has been reviewed and is accepted. The terminal disclaimer has been recorded.

#### ***Claim Interpretation***

3. The claims 1-40, 42-48 and 60 are drafted in product-by-process format. See MPEP 2113. It is noted that claim 15 employs open language defining the agent or monomer, e.g., amine-containing monomer. The amine compounds are open to more than the two reactive amino hydrogens claimed.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

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art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 1-27 and 60 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claims now define "a molar ratio of di-, tri, or tetra glycidyl ethers of polyols of an amine". Said ratio was not pointed out and was not found in the original specification as now claimed.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1-27 and 60 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what molar ratio applicants intend to define. It is unclear what are the intended materials defining said ratio since it appears the glycidyl ethers of polyols of an amine are defined as a reactant.

Claims 18-26 are indefinite since it is unclear what is applicants intended materials since the claim requires an amine capping monomer and an amine alkylating agents, i.e., said amine capping monomer would no longer be an amine capping monomer but a polymeric amine.

***Claim Rejections - 35 USC § 102***

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1-3, 5-10, 15-16, 18-23, 51-53, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Ott et al, US 5,324,404. Ott et al (columns 9-12, grinding resins A1-6) disclose polymer resin compositions employing DER 732 (polypropylene glycol diglycidyl ether from Dow Chemicals) reacted with 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ) and N,N-dimethylaminopropylamine ( $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{NH}_2$ ).

Regarding claim 51, the N,N-dimethylaminopropylamine reads on the capping amine monomer and the alkylating agent is indistinct from the reaction products having complete reaction of the diglycidyl ethers or epihalohydrin capped diols since the product structures are indistinct and the halogen is a reaction by-product. Attention is further directed to claim 60(3).

Claim 60 is included in this rejection since 2,2'-aminoethoxyethanol reads on claim 60, 1)(b); when R1 is  $(-\text{CH}_2-\text{CH}_2-\text{O}-)_n$ ,  $n = 2$  and Z1 = H. DER 732 reads on components 2) and 3), which are indistinct in the final product when R8 is 2-hydroxy-3-chloropropyl. The terminal halogens would react and expected to form the same reaction products as the diglycidyl ethers. Said products reactive with the free amine nitrogens and forming a 2-hydroxypropyl linkage.

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10. Claims 15-16, 18-19, 26, and 60 are rejected under 35 U.S.C. 102(b) as being anticipated by Starner, US 5,591,812. Starner (columns 3-4; examples and claims) disclose the reaction products of methylamine and polyglycidyl ethers. When the value of  $m$  (structure at column 3, lines 60) is greater than 1, the intermediate compound defined by  $m = 1$  has two reactive aminohydrogens and a tertiary amine. The product resulting from said compounds  $m > 1$  read on the product by process polymer compositions.

Starner (column 5, lines 10-22) disclose the use of alcohol as a solvent and the compounds are tested by reacting with an acid (column 8, lines 15-25). The products resulting from diglycidyl ethers read on alkylating agents as defined. Attention is directed to claim 60 wherein the N-alkylating agents would result in the same products as the diglycidyl ethers when R8 is 2-hydroxy-3-chloropropyl.

***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 6-10, 18-23, and 27-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ott et al, US 5,324,404. Ott et al (columns 9-12, grinding resins A1-6) disclose polymer resin compositions employing DER 732 (polypropylene glycol diglycidyl ether from Dow Chemicals) reacted with 2,2'-aminoethoxyethanol ( $\text{H}_2\text{NCH}_2\text{CH}_2\text{OCH}_2\text{CH}_2\text{OH}$ ) and N,N-dimethylaminopropylamine ( $(\text{CH}_3)_2\text{NCH}_2\text{CH}_2\text{NH}_2$ ).

Ott et al differs from the claims in the use of a particular polyglycidyl ether, complete reaction of the polyglycidyl ether to form the same reaction product of N-alkylating agents when the N-alkylating agents are capped with 2-hydroxy-3-chloropropyl, or the residual by-product chloride or bromide resulting from N-alkylating agents are capped with 2-hydroxy-3-chloropropyl.

Ott et al (column 6, lines 27 et seq; particularly lines 55 and 62-65) disclose a number of polyglycidyl ether or polyepoxides including but not limited to those derived from epihalohydrins, glycerol, and polyepoxide derived from the epoxidation of olefins.

It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the polyglycidyl ether or polyepoxides taught in the Ott et al reference as an obvious functional equivalent to the DER 732 or the epoxy resins exemplified.

To the extent the Ott et al reference differs in that the reaction of the polyglycidyl ethers are incomplete, less than 100%, or the compositions contain some residual by-

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product halogen, the Ott et al reference teaches the use of alternative polyglycidyl ethers and/or polyepoxides derived from epihalohydrins. It would have been obvious to one of ordinary skill in the art at the time of applicants' invention to employ the materials derived from epihalohydrins as an obvious functional equivalent to the polyglycidyl ethers and/or polyepoxides exemplified, which would have resulted in polymer compositions having the same or substantially the same structure. See MPEP 2113.

***Allowable Subject Matter***

14. Claims 42-50 are allowed.
15. Claims 37-40 and 54-59 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

16. Applicant's arguments filed August 18, 2006 have been fully considered but they are not persuasive.
17. Applicants (pages 17-18) assert the Ott reference employs glycidyl ethers of polyphenol (A), polyglycidyl ether of a polyol (B) and 2-(2-aminoethoxy)ethanol as (C), which does not employ making polymers of (B) and (C) without the presence of (A). Applicants further assert the materials are taught as grinding agents for pigments rather than demulsifiers as now claimed. Generally, the preamble does not impart patentable distinction to a structurally defined polymer.



The use of polyphenol compounds and glycidyl ethers thereof are known in the demulsifier art and applicants have not shown that said materials disclosed in the Ott reference are distinguished based on said function as a demulsifier.

The claims do not preclude the use of (A) in making the polymers as claimed. Said argument is further inconsistent with the inclusion of aromatic groups as an alkylating agent.

18. Applicants (pages 19 and 20) arguments regarding Starner have not been deemed persuasive since the limitation applicants assert to distinguish the reference is indefinite. Please see the above rejections under 35 USC 112.

19. In response to applicant's argument (pages 20 and 21) that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Each of the various components are specifically disclosed as a polymeric components in making the Ott polymers. The demulsifying action of the polymer results from the capacity to disrupt the interface of the emulsion via polymeric charge, which the Ott polymers contain. Applicants claims broadly define various components in a product-by-process format. Said components are disclosed in the prior art in making

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polymers for a separate function and have not been shown to provide for patentably distinct polymers.


20. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel S. Metzmaier whose telephone number is (571) 272-1089. The examiner can normally be reached on 9:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy P. Gulakowski can be reached on (571) 272-1302. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Daniel S. Metzmaier  
Primary Examiner  
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DSM